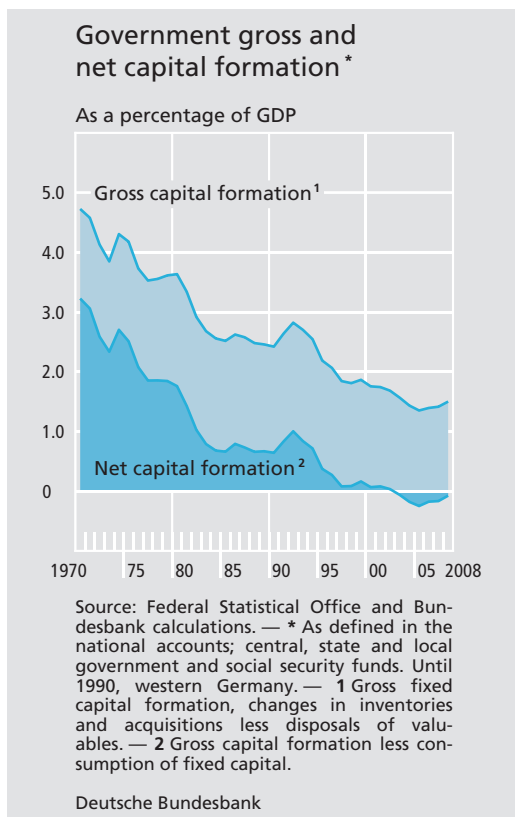


The development of government investment

For some time now, general government investment in Germany has displayed a downward trend. Given the resultant falling capital stock ratio coupled with a rising debt ratio, the overall government asset position has deteriorated sharply over time. Owing to foreseeable high budget deficits, this trend is set to continue in the coming years. Looking further ahead, however, the newly adopted debt rules could reverse this development.

Investment in infrastructure is essential for macroeconomic growth. However, it is almost impossible to determine the optimal size of government capital stock. Ultimately, each investment must be examined to determine whether it makes economic sense and whether it would be better accommodated in the government or the corporate sector. This should also be borne in mind when assessing the decline in government investment in Germany which, in recent years, has also resulted in part from the diminishing catch-up requirement in eastern Germany. Government investment for the purpose of stimulating the economy is meaningful only – and on a limited scale – in times of extraordinary crisis. One desirable objective would be to stabilise the level of local government investment, which has been procyclical in the past.

The government uses its budgets to finance both current expenditure, such as on person-



Various definitions of investment

nel, social benefits or subsidies, and investment for the purpose of asset formation or preservation. Investments are often made in areas that are of key importance for macroeconomic growth prospects. However, the definition of investment can vary considerably depending on the underlying concept. In this article, investment is defined in the narrower sense of acquisition of financial and non-financial assets and not in the very broad sense including human or social capital. This article describes and analyses the development of general government investment in Germany, first from a longer-term perspective on the basis of the national accounts, which basically record the acquisition of non-financial assets. This is followed by a more differentiated exposition and classification of the changes over the past decade based on

the broader definition of investment used in the central, state and local government budgets and the associated government financial statistics.¹

Government non-financial asset formation and macroeconomic aspects

Overview and long-term tendencies

The national accounts document a clear long-term decline in government investment in relation to gross domestic product (GDP).² They record a fall from just over 4½% in the early 1970s amid fluctuations to 1½% in 2008, which is low also by international standards (see chart on this page and box on page 17). By subtracting the consumption of fixed capital recorded in the national accounts, the development of net capital formation can also be derived. In relation to GDP, it initially fell sharply from just over 3% in 1970 to ½% in the mid-1980s. After rising briefly on the back of German reunification, this measure has actually been slightly negative since 2003.

Decline in government investment ...

... and negative net capital formation

This is also reflected in a clear fall in the ratio of the government capital stock to GDP. It is

Multi-year fall in ratio of government capital stock to GDP

¹ For developments prior to 1999 and individual aspects, especially the definition of investment, see also Deutsche Bundesbank, Developments of public sector investment, and its financing, Monthly Report, April 1999, pp 29-45.

² In addition to the core budgets of central, state and local government and the social security funds, the figures in the national accounts also include outsourced entities where these are not assignable to the corporate sector in accordance with the national accounts regulations – for example, owing to a lack of autonomy in their principal activity or because their cost coverage is too low. Furthermore, proceeds from the sale of non-financial assets are deducted from expenditure.

true that government net fixed assets as reported at replacement cost in the national accounts rose from 51% of GDP in 1970 to 61% in the early 1980s (see chart on page 18), which was partly due to an increase in the recorded value of the capital stock owing to a particularly sharp price hike in public sector construction. But thereafter the ratio fell, apart from some brief rebounds such as in the initial post-reunification years, to 44% in 2007. However, certain data restrictions must be borne in mind. For instance, changes in the purchase price of existing capital stock are hard to gauge and the outsourcing of smaller entities is not sufficiently documented.³ Furthermore, undeveloped land, subsoil assets and water resources are not included in the calculations and the value of land underlying buildings and structures has likewise been excluded.

*Government
net worth
largely
consumed*

If land underlying buildings and structures⁴ is included, government non-financial assets amounted to about 50% of GDP in 2008. However, given the high level of general government debt well in excess of the stock of financial assets, this is offset by sharply negative net financial assets which amounted to 45% of GDP at the end of 2008. Government net worth was thus largely consumed. If no retrenchment measures are taken, the overall asset position will deteriorate even further in the next few years. If the implicit

³ As a result, it is likely that the level of consumption of fixed capital is overstated by the recorded figures and net capital formation is understated.

⁴ The value of this item was estimated at just over €170 billion or just over 7½% of GDP at the end of 2005. See Deutsche Bundesbank, Integrated sectoral and overall balance sheets for Germany, Monthly Report, January 2008, pp 31-43.

International comparison of government investment

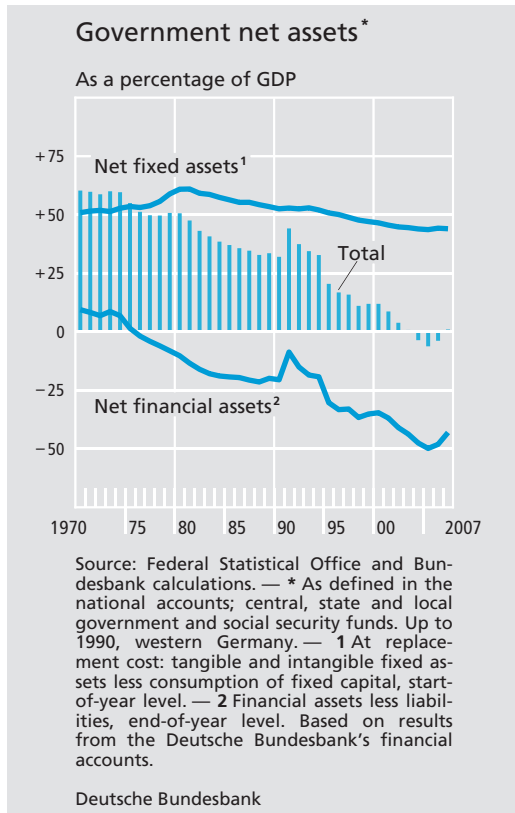
The national accounts data, which are collected in accordance with uniform rules, permit an international comparison of general government investment. In the EU, at 1½%, Germany recorded a very small ratio of government gross capital formation to gross domestic product (GDP) in 2008, as it had done in previous years. Only Austria, which has hived off major service entities, such as central government real estate and motorway construction, from its general government budgets, recorded a noticeably lower figure of 1% (see table below). At 5½% each, Ireland and the new member states of Bulgaria, Estonia and Romania, who received sizeable investment grants from the EU budget, recorded the highest figures. But the ratios in "old" member states such as Spain, France, the Netherlands, Sweden and Luxembourg were likewise more than twice as high as in Germany. Outside the EU, Japan recorded a comparatively high investment ratio of more than 3% in 2008, as did the United States, as a result of extensive economic stimulus measures. However, international comparisons seem to be hampered also over time by large differences in the general ratio of public to private service provision and in the outsourcing of infrastructure services from general government budgets – even more so than in the national context (see the comments in the section on explanatory factors regarding the decline in non-financial asset formation, pages 30f).

As a percentage of GDP

Countries	1999	2007	2008
Austria	1.72	1.02	1.03
Belgium	1.96	1.62	1.63
Denmark	1.66	1.75	1.80
Finland	2.76	2.52	2.54
France	2.93	3.29	3.20
Germany	1.87	1.47	1.52
Greece	3.20	2.96	2.95
Ireland	3.07	4.36	5.36
Italy	2.38	2.33	2.22
Luxembourg	4.29	3.37	3.94
Netherlands	3.02	3.33	3.28
Portugal	4.05	2.31	2.13
Spain	3.33	3.84	3.77
Sweden	3.08	3.09	3.33
United Kingdom	1.27	1.82	2.32
EU15	2.29	2.42	2.51
Bulgaria	3.88	4.78	5.60
Cyprus	2.45	2.95	2.98
Czech Republic	3.25	4.71	4.84
Estonia	4.26	5.43	5.62
Hungary	2.87	3.56	2.80
Latvia	1.45	5.66	4.90
Lithuania	2.58	5.21	4.90
Malta	4.46	3.96	2.67
Poland	3.49	4.10	4.65
Romania	1.66	5.71	5.39
Slovakia	2.92	1.87	1.84
Slovenia	3.43	3.74	4.15
EU27	2.32	2.55	2.65
Japan	5.90	3.11	3.04
USA	2.45	2.55	3.50

Source: European Commission (AMECO database) and Bundesbank calculations.

Deutsche Bundesbank



liabilities arising from the pay-as-you-go retirement pension schemes or from the currently extensive guarantees are included, the balance is much more negative.

Falling government share of overall investment and non-financial assets

At the macroeconomic level, the ratio of government to private sector investment has also decreased noticeably – from a high of 20% in the mid-1970s to barely 8% in 2008, although it should be noted that private investment is far more volatile than government investment, presumably for cyclical reasons (see chart on page 19). The ratio of government to overall net fixed assets has likewise declined. However, here the decrease from almost 19% in the early 1980s to just under 14% in 2008 is less drastic on balance, *inter alia* owing to the longevity of many infrastructure investments.

Government investment and growth

Investment in areas where services are traditionally provided by the government sector is essential for potential output and macroeconomic growth (see box on pages 20 and 21). This concerns, in particular, the need for a well developed infrastructure. In addition to an adequate transport infrastructure, this comprises municipal utilities and disposal systems and, in particular, educational facilities as well as those non-financial assets that are required for public administration and security.⁵

Investment in infrastructure important for long-term economic development ...

A comprehensive assessment of government investment needs to consider not only the long-term growth effects in isolation but also their costs. This includes the financing cost, which in most cases ultimately takes the form of compulsory payments with distortionary effects. It must also be borne in mind that private investors could be crowded out and that investments entail follow-up costs for government budgets. The overall result does not necessarily always favour higher government investment. Furthermore, it is not possible to clearly define the optimal government capital stock above which the additional costs of further investment would exceed the additional benefits, which depend partly on the preferences of the inhabitants.

... but increasing government investment not advantageous per se

⁵ Investment in government consumption-related assets, such as recreation facilities, that is accountable for only a small share of expenditure, is also classified as capital formation as this is to give rise to (consumption) benefits over time. Its impact on potential output is likely to be much smaller, however.

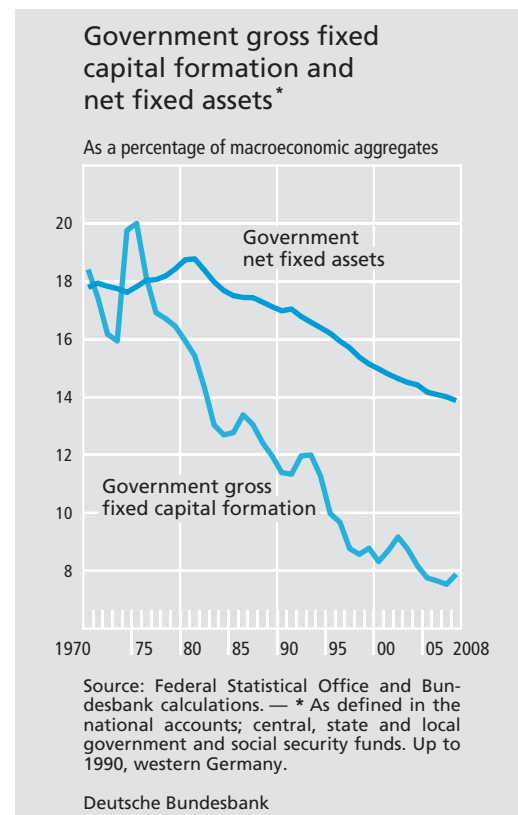
*Case-by-case
assessment
necessary ...*

*... also with
regard to
corporate
investment*

Ultimately each case must be examined on its merits to determine whether the benefits obtained by government investment outweigh the costs and whether non-financial asset formation is best performed by means of government or corporate sector investment. For instance, investments or entire areas of operations can be outsourced from government budgets, where necessary, via new, more cost-efficient organisational structures. A service can then be provided by the private sector in return for cost-covering fees or the government can still be directly responsible but hire the facilities required that are set up and maintained by a private contractor.⁶ One of the issues that must be considered when selecting an organisational structure is whether the cost savings achievable by using private service providers are large enough to cover their profit margins and the usually higher cost of financing. The decision will depend not least on the underlying framework, such as antitrust legislation or the rules for awarding contracts, but also on the public administration's effectiveness in framing the contract provisions and monitoring performance. Even in the case of natural monopolies, such as many supply and transport networks, government investment is not necessarily required.⁷ Given that a long-term contractual relationship is necessary in this area, however, particular caution must be exercised with regard to the detailed terms and conditions.

*Infrastructure
good overall,
but presumably
some deficits*

By international standards, Germany's infrastructure is currently rated as being "very good", in particular regarding basic provision (transport and communications, electricity, gas and water supply).⁸ However, a number



of studies also see some room for improvement, not least given low government investment during the past few years and infrastructural deficits in eastern Germany.⁹

⁶ The latter would lead to a recording of current expenditure instead of investment within the government sector.

⁷ For example, the supply networks maintained by public utilities, the rail infrastructure or airports that are majority-owned by general government are not classified as part of the government capital stock but instead are assigned to the corporate sector.

⁸ See World Economic Forum, The Global Competitiveness Report 2009-2010, pp 366 ff.

⁹ See M Reidenbach, T Bracher, B Grabow, S Schneider, and A Seidel-Schulze (2008), Investitionsrückstand und Investitionsbedarf der Kommunen. Ausmass, Ursachen, Folgen, Strategien, Difu – Stadt Forschung Praxis, Volume 4, or for more general information, DIW econ (2009), Richtig investieren – Öffentliche Investitionen zur Erhöhung des langfristigen Wachstumspotenzials in Deutschland, March 2009. A gap in infrastructure in the east German states has been estimated for 2005, see D Vesper (2001), Zum infrastrukturellen Nachholbedarf in Ostdeutschland, DIW Wochenbericht 20/01. (Literature cited here available in German only.)

Studies on the relationship of government investment with economic growth

In the empirical economic literature, the relationship between government investment and macroeconomic growth is investigated using a number of different approaches. We can distinguish between studies based on production functions, those using a cost or profit function approach, investigations applying time series econometric methods and analyses of the optimal public capital stock.¹

In the production function approaches,² the public capital stock is modelled either directly as a factor in an aggregate production function or indirectly through its effect on a productivity parameter of the production function. The elasticity of gross domestic product (GDP) with respect to changes in government investment is calculated empirically on the basis of this production function. However, the validity of these approaches is disputed. They require far-reaching and controversial assumptions regarding the formulation of the aggregate production function. Moreover, such studies face an endogeneity problem: thus while the aim is to examine the impact of government investment on growth, growth can also affect government investment.³ Furthermore, such studies often ignore the financing of public investment and the associated macroeconomic costs. By potentially disregarding both the interdependencies between investment and economic growth and the financing costs, it is possible that such studies significantly overstate the impact of government investment on economic development. All in all, the results of empirical studies using a production function approach – some of which find very large growth effects of government investment⁴ – are therefore to be interpreted very carefully.

Instead of the aggregate analysis of the macroeconomy applied in the production function approaches, studies based

on cost and profit functions examine the effects of public investment on private-sector enterprises' labour and capital costs and the associated output and growth effects. One important focus of these approaches is whether private investment is crowded out by public investment. Empirical studies for Germany find only very limited evidence of this.⁵ In some studies, moreover, no evidence could be found that government investment has any impact on the costs of private enterprises.⁶ As most investigations using this approach analyse specific economic sectors, their ability to reliably assess the impact of government investment on overall macroeconomic growth is limited.

Time series econometric studies – which use vector autoregression (VAR) or vector error correction (VEC) models – determine all variables endogenously, can capture dynamic adjustment processes and factor in indirect (feedback) effects between the variables. This means, for example, that possible interdependencies between government investment and economic growth can be taken into account. However, it should be noted that these analyses, too, rely on far-reaching assumptions regarding the economic relationships between the variables included.⁷ Most time series econometric studies find that investment has a substantial positive impact on economic growth.⁸ Nonetheless, the results depend heavily on the variables included, the precise specification of the model and the assumptions regarding the financing of government investment. When interpreting the results of these studies, it is important to note that the inclusion of additional explanatory variables or changes in the specification and economic assumptions can clearly reduce the estimated impact of government investment. All in all, the time series econometric studies must likewise be interpreted with caution. Although there are

1 For a detailed overview of the literature, see also W Romp and J de Haan (2007), *Public Capital and Economic Growth: A Critical Survey*, *Perspektiven der Wirtschaftspolitik*, Vol 8, pp 6-52. — 2 A seminal contribution is D A Aschauer (1989), *Is public expenditure productive?* *Journal of Monetary Economics* 23(2), pp 177-200. — 3 Econometric techniques applied in empirical production function studies in order to take account of the interdependencies between investment and economic growth include, for example, the simultaneous analysis of the determinants of investment and growth (the "simultaneous equation approach" is applied, for example, in H Esfahani and M T Ramirez (2003), *Institutions, Infrastructure and Economic Growth*, *Journal of Development Economics* 70, pp 443-477), the use of more robust estimation methods in which the results are not influenced as heavily by the interdependencies between the two variables (eg the application of a generalised method of moments (GMM) estimator in C Ai and S P Cassou (1995), *A Normative Analysis of Public Capital*, *Applied Economics* 27, pp 1201-1209) or reliance on instrumental variables (see, for example, C Calderón and L Servén (2002), *The Output Cost of Latin America's Infrastructure Gap*, Central Bank

of Chile Working Paper No 186). However, the number of studies applying these techniques is limited and most studies analyse US data or a cross-section of a large number of countries. This complicates the applicability of the results to Germany. — 4 For calculations for Germany using this approach, see C Kamps (2006), *New Estimates of Government Net Capital Stocks for 22 OECD Countries 1960-2001*, IMF Staff Papers 53, pp 120-150, or P O Demetriades and T P Mamuneas (2000), *Intertemporal Output and Employment Effects of Public Infrastructure Capital: Evidence from 12 OECD Economies*, *Economic Journal* 110, pp 687-712. — 5 See H Seitz (1994), *Public Capital and the Demand for Private Inputs*, *Journal of Public Economics* 54(2), pp 287-307 and G Licht and H Seitz (1995), *The Impact of Public Infrastructure Capital on Regional Manufacturing Production Cost*, *Regional Studies* 29(3), pp 231-240. — 6 See, for example, W Kitterer and C-H Schlag (1995) *Sind öffentliche Investitionen produktiv? Eine empirische Analyse für die Bundesrepublik Deutschland*, *Finanzarchiv* 52, pp 460-477 (in German only). — 7 Depending on the approach applied, these can relate, for example, to the ordering of the variables in a VAR or VEC model or further-reaching contemporaneous relationships between

some indications that public investment has a positive impact on economic growth, these effects are difficult to quantify, and the inference that government investment is worthwhile *per se* does not seem warranted.

Attempts to determine the optimal public capital stock for maximising aggregate value added are generally promising in terms of their policy implications as they explicitly include the financing side of government investment⁹ and aim to estimate the effects of additional public investment on the basis of existing public capital stock. One of these approaches, by Conrad and Seitz (1994),¹⁰ concludes that Germany's public capital stock tended to be undersized from 1961 to 1979 and oversized from 1980 to 1988. In more recent studies the optimal capital stock is calculated on the basis of a non-linear relationship between government investment and economic growth, and can therefore, for instance, incorporate diminishing marginal returns on public investment which might be accompanied by a rise in capital stock.¹¹ Kamps' (2005) application of this method finds little evidence that Germany's public capital stock is too small, although the investment ratio at the beginning of this decade is estimated to be too low to maintain public capital stock at the optimal level. However, it should be remembered that the more recent studies, too, can only gauge the optimal capital stock fairly roughly and, moreover, rely on far-reaching and, indeed, critical assumptions.¹² Another problem of these approaches – and of macroeconomic models in general – is their inability to adequately capture aspects relevant to concrete investment decisions, such as the optimal response to specific instances of congestion or quality problems affecting public infrastructure.

the variables. — 8 For West German quarterly data from 1960 to 1989, Mittnik and Neumann (2001) estimate that additional public investment leads to a significant increase in GDP – fully effective within one year – equivalent to three times the amount invested. Kamps (2004) and Heppke-Falk, Tenhofen and Wolff (2006) calculated significantly higher long-term values for the years from 1960 to 2001 and from 1974 to 2004, respectively. See S Mittnik and T Neumann (2001), Dynamic Effects of Public Investment: Vector Autoregressive Evidence from Six Industrialized Countries, *Empirical Economics* 26, pp 429-446; C Kamps (2004), The Dynamic Effects of Public Capital: VAR Evidence for 22 OECD Countries, Kiel Institute of World Economics Working Paper No 1224; K Heppke-Falk, J Tenhofen and G B Wolff (2006), The Macroeconomic Effects of Exogenous Fiscal Policy Shocks in Germany: A Disaggregated SVAR Analysis, Deutsche Bundesbank Research Centre, Discussion Paper, Series 1, No 41/2006. — 9 More recent studies, eg Kamps (2005), also take account of the costs of distortions caused by taxation for financing government investment. See C Kamps (2005), Is There a Lack of Public Capital in the European Union?, *EIB Papers* 10, pp 72-93. — 10 K Conrad and H Seitz (1994),

In addition to those already mentioned, other important factors are omitted from most studies. In particular, due account should be taken of the fact that most public infrastructure items are collective goods. The congestion effects that occur in connection with such goods (eg traffic jams) lend weight to the idea that – contrary to the assumption in most studies to date – government investment and economic growth are probably linked by a non-linear relationship. Another drawback of many empirical studies is that expenditure categories with possibly greatly varying growth impacts (eg investment in road construction or in social services and healthcare) are lumped together in the investment data. Studies that examine the effects of clearly delineated subcategories of government investment offer more in this respect.¹³ Finally, studies in political economy¹⁴ show that government investment decisions are often driven by political rather than economic criteria, which might dampen the associated growth effects.

In summary, the current literature generally finds that government investment has a positive impact on macroeconomic growth; however, the results of such studies are heavily influenced by the underlying assumptions and important aspects are omitted. Furthermore, studies on the optimal public capital stock that investigate the effects of additional investment based on the current level and take explicit account of financing aspects suggest that, at most, only limited expenditure rises for public investment are warranted in Germany.

The Economic Benefits of Public Infrastructure, *Applied Economics* 26, pp 303-311. — 11 See D A Aschauer (2000), Do States Optimise? Public Capital and Economic Growth, *Annals of Regional Science* 34, pp 343-363. — 12 For example, Kamps (2005), loc cit, assumes that the EU-15 countries have the same optimal level of public capital stock. By contrast, another study finds indications of large differences in the optimal public capital stock between different countries; see D Canning and P Pedroni (1999), Infrastructure and long run Economic Growth, mimeo. — 13 For a productivity analysis of road construction investment, see, for example, A Stephan, (2000), Regional Infrastructure Policy and its Impact on Productivity: A Comparison of Germany and France, *Applied Economics Quarterly* 46, pp 327-356. — 14 See A Kemmerling and A Stephan (2002), The Contribution of Local Public Infrastructure to Private Productivity and its Political Economy: Evidence from a Panel of Large German Cities, *Public Choice* 113 (3/4), pp 403-424, or O Cadot, L-H Röller and A Stephan (2006), Contribution to Productivity or Pork Barrel? Two Faces of Infrastructure Investment, *Journal of Public Economics* 90 (6/7), pp 1133-1153.

Government investment and the business cycle

Government investment to stimulate economy...

Besides its role in longer-term macroeconomic development, government investment is sometimes also considered an economic policy tool in cyclical downturns. It is expected to have a comparatively high short-term multiplier effect on economic activity as the government sector creates demand directly, thus ensuring that leakages as a result of higher saving are not as substantial, and the import share is relatively low.

... appropriate to a limited extent only

However, a number of fundamental objections to discretionary macro-management of the economy apply especially to government investment. For instance, government investment is associated with a lengthy planning phase and is carried out predominantly at the subordinate level of local government. Furthermore, given the primary focus on parts of the construction sector, there is a risk that the stimulus from such measures may remain restricted to a relatively small part of the overall economy which soon reaches full capacity utilisation, so that the impact largely fades into sectoral price increases.¹⁰

Investment tends to be procyclical

In the last thirty years, these constraints and experiences prevented the goal of kick-starting the economy from playing a major role in government investment in Germany. Nevertheless, the development of government investment since 1980 in particular has been procyclical, mainly owing to local government activities (see also section on page 23). This is likely to reflect the interplay of sharp cyclical fluctuations in local government tax

revenue as well as state government transfers and local government budgetary rules, the aim of which is rightly not to stabilise economic activity (see page 30).

However, the stimulus packages that have been implemented since the final quarter of 2008 to support economic activity lean heavily on government investment measures. By focusing on smaller-scale construction projects spread throughout the regions, which can be completed relatively quickly, and on the acquisition of moveable capital goods, the aim is to achieve the key economic policy goals of rapid implementation and broad impact. To accelerate this process, the government even eased the regulations governing the award of contracts. However, the outflow of funds was slowed down by other factors – not least, the institutional features of Germany's federal political structure (see box on pages 24 and 25).

Insofar as government investment is currently being expanded for fiscal stimulus reasons, care must be taken – not least given the recent signs of macroeconomic stabilisation – to ensure that due account is taken of the principle of cost-effectiveness. In contrast to a targeted structural rise in investment, measures that are motivated solely by short-term cyclical considerations should aspire less to increase the capital stock or indebtedness than to bring forward already planned invest-

Investment is major component of latest stimulus programmes, ...

... but should be kept within bounds

¹⁰ For example, the effect of the "Future Investment Programme", which was adopted in 1977, was not actually felt until the next upswing and finished as this petered out in 1980. This hence procyclical timing ultimately played a substantial role in the sharp rise in construction prices during this period.

ments. This also implies that the temporary relief for future budgets ensuing from the frontloading of investment projects should not be used for other additional expenditure. The strains on government budgets which are becoming increasingly apparent make strict expenditure curbs indispensable.

Investment in central, state and local government budgets and explanatory factors

Definition

Investment expenditure defined more broadly in central, state and local government budgets

In the central, state and local government budgets¹¹ and the associated government's financial statistics, investment comprises both non-financial asset formation (construction measures (excluding military facilities), acquisition of real estate and tangible fixed assets¹²) and financial asset formation (acquisition of participating interests and loans granted, including calls on guarantees) as well as payments to other entities for investment purposes.¹³ The definition is thus much broader than that employed in the national accounts and, given the fact that it includes grants to third parties, it is clear that no direct conclusions about a rise in the government capital stock can be inferred from the invest-

Higher government capital stock uncertain

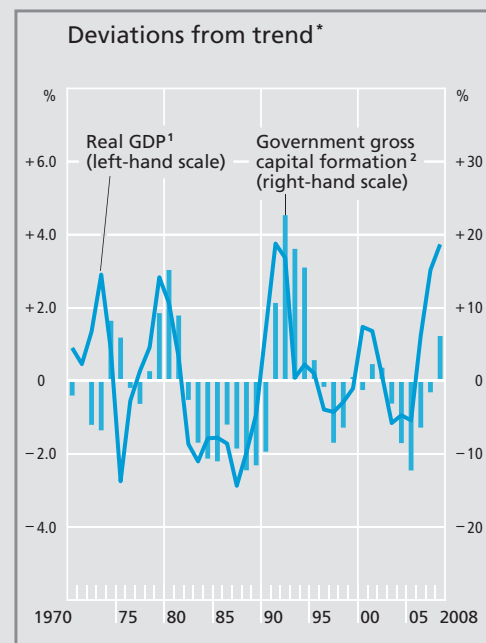
¹¹ In the social security funds, which also belong to the government sector, investment (in particular in non-financial assets) is of minor importance. It is therefore disregarded here, unless otherwise stated.

¹² According to central government's budgetary rules, the acquisition of tangible fixed assets is assigned to current expenditure if the useful economic life is less than one year or if the value, which can also relate to the sum-total for various assets, is below €5,000.

¹³ Investment grants to other government budgets are excluded so as to avoid double counting.

Government gross capital formation and the level of economic activity

To examine the possible interconnection between the level of economic activity and gross capital formation of general government, the deviation of real GDP from its trend (as a percentage of trend GDP) is compared with the deviation of government gross capital formation from its trend (as a percentage of trend investment). For the entire period from 1970 to 2008, this results in a statistically significant positive correlation at the 1% level of 0.53 or as much as 0.81 when trend deviation of real GDP is lagged by one year. If gross capital formation of local government is considered in isolation, then the values are slightly higher. In the period since 1980, the correlation coefficients – again at the 1% significance level – increase to 0.64 and 0.88, respectively.



Sources: Federal Statistical Office, Federal Ministry of Economics and Technology and Bundesbank calculations. — * The trend is calculated using an HP filter with a smoothing parameter of $\lambda=100$. — 1 Percentage deviation of trend GDP. — 2 Percentage deviation of trend investment.

Deutsche Bundesbank

Government investment in the second fiscal stimulus package

To counteract the effects in Germany of the exceptionally strong global economic slowdown, the German government launched two fiscal stimulus packages. A first package of measures adopted in autumn 2008 included *inter alia* a temporary rise in central government investment in transport infrastructure totalling €2 billion. This was soon followed in January 2009 by a further stabilisation programme for 2009 and 2010 with a total volume of just under €50 billion. In addition to permanent reductions in income tax and a cut in the health insurance contribution rate, a key feature of the package is a temporary increase in general government investment¹ of just under €17 ½ billion (including state and local government's share of just under €3 ½ billion). In this context, the debt-financed central government special fund "Investment and Redemption Fund" was set up in early March.² The administrative agreement regulating implementation between central government and all the state governments entered into force at the start of April. Investments eligible for subsidisation begun by the end of 2010 can now be principally financed by the fund as long as the invoices are submitted by 2011 at the latest. It is planned to use at least half of the volume of funds during 2009.

Public procurement rules were temporarily eased so as to expedite the stabilisation impact of the measures. In particular, the thresholds up to which contracts can be awarded on a discretionary basis or via a limited tender were raised significantly. Possible cost savings from using the standard tender procedure were consequently subordinated to the aim of quickly reviving economic activity.

€4 billion is available to central government from the fund. As well as increasing investment in transport by €2 billion, a further €2 billion is to be used for building restoration, departmental needs and IT procurement. In accordance with the Future Investment Act (*Zukunftsinvestitionsgesetz*), €10 billion is being set aside to help fund state and local government projects (they must bear at least a quarter of the total costs themselves as additional co-contributions). €6 ½ billion of the fund's resources is to be allocated to the education and training infrastructure (including infant support and research) and €3 ½ billion to other infrastructure measures (excluding sewerage and local public transport). It was agreed that at least 70% of investment is to be carried out by local government.

¹ In addition to non-financial asset formation and investment grants, this also includes expenditure of the defence ministry and in the field of information and communications technology, which are classified

The 2006 federal structure reform placed relatively tight restrictions on the promotion of state and local government investment by means of central government grants. Pursuant to Article 104b of the Basic Law, central government could assist such projects only if it had legislative competence in the respective area. The Future Investment Act of March 2009 thus stipulates that the promotion of investment in educational buildings is coupled to energy-saving measures and the promotion of municipal road construction is restricted to noise abatement measures. Article 104b of the Basic Law was modified by virtue of the 2009 federal structure reform, which entered into force at the end of July. In cases of special emergency, central government can now also provide investment subsidies without legislative authority. Ahead of this regulation, central government had indicated that the assessment of compliance with the promotion provisions would be based on the legislative *status quo* at the time the relevant measure is completed. However, owing to the risk of central government reclamations of funds in the event of inappropriate use, there seemed little point in awarding investments beyond the defined boundaries before the constitutional amendment was definitively passed. After the reform, the previously decreed narrow sub-constitutional legal restrictions on the use of subsidies were not amended, so that the permissible scope of application of the funds still appears to be considerably restricted.

The Future Investment Act and the accompanying administrative agreement contain rules designed to ensure that central government funds are used for investment that is both supplementary to existing plans and will have a direct impact on demand. An expansionary macroeconomic effect is to be ensured by the requirement that state and local government's investment volume for the three-year period from 2009 to 2011 must exceed an adjusted benchmark figure based on past years (60% of the sum of the five-year period from 2004 to 2008 or the total amount of the three-year period from 2006 to 2008) by the amount of the subsidised projects.³ The benchmark figure, to be determined for each state, is reduced by 5% across the board. Further reductions are envisaged in the event of particular burdens arising from falling revenue earmarked for investment purposes, such as in the east German states as a result of declining special supplementary central government grants. Furthermore, the refer-

as other operating expenditure, totalling just under €1 billion. — ² The new special fund further reduces the transparency of central government debt incurrence. It is planned to redeem the fund's debts

ence value is to be lowered by the percentage by which average tax revenue during the promotion period lags behind actual receipts in 2008, when revenue was very strong. Overall, these provisions significantly dilute the criterion that the investment spending must be supplementary to the expenditure totals. However, it should be borne in mind that even a decision not to make cuts on measures already planned, which could otherwise be necessary owing to the relatively strict local government borrowing limits, will contribute to macroeconomic stabilisation.

Given the overall favourable financial development of local government budgets in recent years compared with the ongoing deficits of central government, it was important for the latter to limit mere shifts of the funding of measures already planned. It therefore stipulates that projects may not be sponsored if they have already been appropriated in the budget plans. However, it cannot be assumed that every local government's 2009 budget plan had already entered into force on the cut-off date at the end of January. Furthermore, municipalities are free to bring forward investment projects planned for future years which have not yet been appropriated in the budget plans. Overall, the stipulation that investment spending must be supplementary to existing plans is therefore likely to offer only limited protection against the shift of financial burdens. But ultimately, such effects must be accepted by central government in the interest of achieving a rapid increase in economically meaningful investments by state and local government. At the end of the day, the support measures are intended to boost economic activity by releasing funds in the short term, whereas the decision on the long-term investment volume should be made irrespective of cyclical fluctuations.

To encourage an efficient use of the funds, a minimum co-payment by state or local government of 25% was stipulated. While state government, in accordance with the old borrowing limits which still apply, may take out loans to cover this co-payment, state government rules applying to local government in principle permit the latter to show net new borrowing in its budget only if it can demonstrate that it has the financial capacity to service it. Although over the last three years positive fiscal balances have been recorded by local government overall, many municipalities have not even achieved a balanced

budget. Rather, above all to finance current expenditure, they took out additional cash advances totalling €32½ billion up to the present which would have to be repaid before they could budget for new investment loans. Given the current steep decline in local business tax revenue, many more local governments will find it difficult to demonstrate the required ability to service new debt in their budgets. The state governments have given assurances that they will also enable financially weak local governments to take part in the fiscal stimulus programme. In many cases, a limited reduction in the municipalities' co-contribution (to be determined by the individual state governments) was established. However, this reduction will often not suffice unless the investment may be expected to yield significant cost savings. The temporary suspension of local government borrowing rules, which is apparently also planned in some cases, seems to be particularly problematic if their budgets were already strained before the crisis, as it would make it more difficult to meet the consolidation requirement unless the investments result in sufficient cost savings. A planned pre-financing of local government's co-funding share through favourable state government loans will also result in burdens for financially weak local governments in the long term if the state government does not compensate for this elsewhere. Ultimately, there is no alternative to requiring these local governments to limit their investments to those which relieve their budgets. Some state governments took this aspect into account in the implementation provisions. Possible delays in the outflow of funds resulting from this should be accepted.

The fact that payments from the Investment and Redemption Fund for state and local government measures reported up to the middle of August this year amounted to only €100 million reflects the general delays associated with government investment programmes as well as the problems outlined above. However, the low outflow of funds is also due to the fact that funds cannot be requested until the invoices have been paid. The influence on production activity to date is significantly higher. The volume of fund payments is also likely to rise considerably by the end of 2009. Even so, the drawdown target set in the Future Investment Act of at least 50% of the programme volume is unlikely to be achieved.

using part of the Deutsche Bundesbank's profit distributions. A subsequent incorporation of these debt instruments into the regular central government debt – as occurred in the case of the Redemption

Fund for Inherited Liabilities – would appear incompatible with the new debt rules. — 3 Financial investments which, at most, make an indirect contribution to GDP growth are not included.

ment spending recorded by central, state and local government. Furthermore, revenue from government asset realisations – in particular, privatisation proceeds and loan repayments – would have to be deducted from such a calculation. In addition, depreciation for wear and tear and for other losses in value (for example, if government assistance measures booked as investments in the wake of the financial crisis largely offset losses) is disregarded in the cameralistic accounting system used by government entities.

Debt rules improved by reforms

Prior to the reform of the national debt rules this summer, the total amount of investment spending recorded in the budget basically also defined the borrowing ceiling for central and state government. This coupling, based on the “golden rule for borrowing”, was intended to ensure that the incurrence of debt was matched by the formation of equivalent assets. However, this failed to prevent a continuous depletion of the government capital stock, not least owing to the inadequate definition of government investment, and the provisions proved to be unsuitable overall. The new fiscal rules for central and state government stipulating a structural budget that is at least close to balance are therefore welcome, especially as they align the national rules more closely with the European provisions.¹⁴

Basic tendencies over the past decade

Clear overall slide in investment expenditure up to 2007 ...

The downward trend in investment expenditure in central, state and local government budgets¹⁵ that resumed soon after German reunification has continued over the past ten

years. After amounting to €81½ billion (4% of GDP) in 1998, investment fell to just under €64 billion (2½% of GDP) in 2007, mainly as a result of a steep decline between 2002 and 2004. However, in 2008 investment rebounded sharply to just over €75 billion (3% of GDP), predominantly owing to extensive acquisitions of participating interests (recapitalisation of financial institutions in the wake of the financial crisis). Nevertheless, the share of investment in the total expenditure of central, state and local government has decreased on balance from 12% to 9½% since 1998 (see chart on page 27 and table on page 28).

... but rise in 2008 due to bank recapitalisations

However, the development appears slightly different if the highly volatile receipts from the sale of tangible fixed assets and participating interests, loan repayments and investment grants received are deducted. Starting from €40½ billion (2% of GDP) in 1998, the net budgetary burden arising from government investment expenditure – excluding the UMTS mobile phone licence receipts recorded in 2000 – fell to a record low of €26 billion (1¼% of GDP) in 2005. Since then, this figure has climbed back up to €55½ billion in 2008, mainly owing to a sharp fall-off in asset realisations since 2005 and the extraordinary capital transfers to banks. Investment adjusted for the above-mentioned capital revenues thus increased to 2¼% of GDP.

Stronger rebound since 2005 after deducting capital gains

¹⁴ For more information, see Deutsche Bundesbank, The reform of the borrowing limits for central and state government, Monthly Report, May 2009, pp 78-79.

¹⁵ This also includes special-purpose associations and special funds. The data are based on accounting figures and, from 2007 on quarterly cash figures (supplemented by Bundesbank estimates).

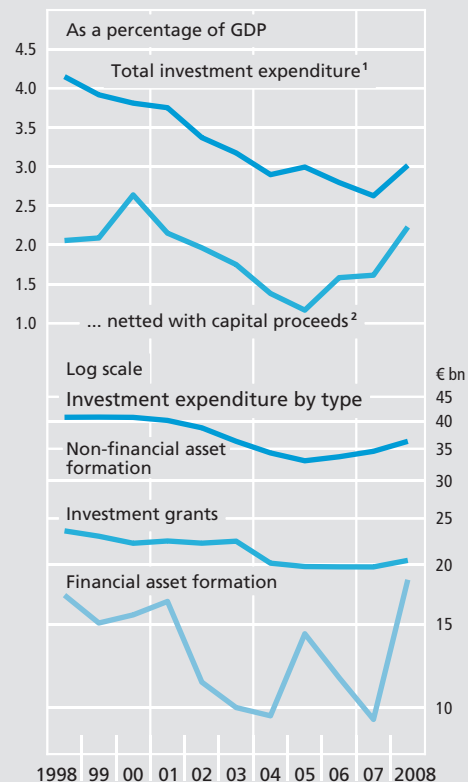
Shares of individual types of investment stable if special effects are factored out ...

At times, the individual categories of investment expenditure developed fairly disparately, albeit without any large, permanent shifts occurring in the overall breakdown. With a relatively stable average share of slightly more than 50%, non-financial asset formation remains the largest component. On average, investment grants account for a share of approximately 30% although, over time, declining payments by state and local government (in eastern Germany in particular) were not fully offset by a rise in central government grants, eg to public enterprises such as the German railways or as part of development aid. Unlike the categories mentioned above, financial asset formation, which on average makes up almost one-fifth of investment, fluctuated greatly. This was due to large acquisitions of participating interests by state governments in individual years¹⁶ and to the activities of the Financial Market Stabilisation Fund in 2008. Furthermore, the ERP Special Fund, which granted loans of €3½ billion on average in the preceding years, was reorganised in mid-2007 with the result that only small amounts are now recorded in the government's financial statistics. After adjustment for these special effects, the level of financial asset formation remained virtually unchanged.

... but with varying weights for different levels of government

Broken down by level of government, the investment of central and state government shows a preponderance of financial asset formation and investment grants – even after excluding the partly large payments to other levels of government. Local government investment, by contrast, is weighted

Investment expenditure of central, state and local government *



Source: Federal Statistical Office and Bundesbank calculations. — * As defined in the government's financial statistics; accounting figures, from 2007 cash figures (supplemented by Bundesbank estimates). — 1 Non-financial asset formation, loans, acquisition of participating interests and investment grants. — 2 Capital proceeds: sale of tangible fixed assets and participating interests, loan repayments and investment grants received.

Deutsche Bundesbank

much more towards non-financial asset formation.

¹⁶ The biggest transactions were as follows: in 2001 injection of capital into the state-owned wholesale banks (known as Landesbanken) Bankgesellschaft Berlin and LBBW (€2½ billion), in 2005 extensive recapitalisations of Landesbanken following refunding of subsidies, in particular in North Rhine-Westphalia and Berlin, as well as topping up of equity capital of two state-owned enterprises in North Rhine-Westphalia (€3½ billion), and in 2008 capital injection into the Landesbank BayernLB (€3 billion booked as cash flows).

Investment of central, state and local government*

As defined in the government's financial statistics; € billion

Item	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 pe	2008 pe
Non-financial asset formation	40.8	40.8	40.7	40.1	38.7	36.3	34.3	33.0	33.7	34.6	36.3
Central government	6.9	7.1	6.7	6.9	6.7	6.7	6.8	7.2	7.1	6.9	7.2
State government	8.1	8.2	8.5	8.3	7.6	7.4	7.0	6.4	6.6	6.7	7.4
Local government	25.8	25.5	25.5	25.0	24.4	22.1	20.5	19.4	20.0	20.9	21.7
Financial asset formation											
Loans	13.7	12.5	12.5	9.7	8.5	7.3	7.4	7.6	8.3	5.9	4.6
Central government	10.3	9.2	9.7	7.3	5.8	5.0	4.8	5.4	6.1	4.1	2.4
State government	2.9	2.6	2.3	2.0	2.2	1.9	2.1	1.6	1.7	1.4	1.7
Local government	0.5	0.7	0.5	0.5	0.5	0.4	0.5	0.6	0.4	0.4	0.5
Participating interests	3.5	2.6	3.2	7.0	2.8	2.7	2.2	6.7	3.3	3.6	13.9
Central government	0.7	0.6	0.6	0.7	0.6	0.5	0.5	0.6	0.6	0.6	8.9
State government	1.7	0.8	1.3	4.2	0.7	1.2	0.8	5.0	1.6	1.9	3.9
Local government	1.2	1.2	1.2	2.1	1.4	1.0	0.9	1.2	1.2	1.1	1.1
Investment grants	23.5	22.9	22.2	22.4	22.2	22.4	20.1	19.8	19.8	19.8	20.4
Central government	7.2	6.9	6.6	7.0	7.6	7.9	7.0	7.0	7.2	8.3	8.3
State government	14.0	13.5	13.2	12.9	12.2	12.0	11.0	10.7	10.5	9.4	10.2
Local government	2.4	2.4	2.4	2.5	2.4	2.5	2.1	2.1	2.2	2.1	1.9
Total investment	81.6	78.8	78.6	79.3	72.2	68.7	64.1	67.2	65.0	63.8	75.3
Central government	25.1	23.8	23.6	21.9	20.7	20.1	19.2	20.2	20.9	19.9	26.8
State government	26.6	25.2	25.3	27.3	22.8	22.6	20.9	23.7	20.3	19.4	23.3
Local government	29.9	29.8	29.7	30.1	28.7	26.0	24.0	23.3	23.8	24.5	25.2

Source: Federal Statistical Office, accounting figures from the general government budget (Fachserie 14, Reihe 3.1 — available in German only); from 2007, quarterly cash figures from the general government budget (Fachserie 14, Reihe 2 — available in German only); supplementary Bundesbank estimates for

off-budget accounts (state and local government) and special-purpose associations; Bundesbank calculations. — * Including special funds; local government including special-purpose associations. Excluding transfers to other government budgets.

Non-financial asset formation by purpose: transport and communications predominant

By far the largest volume of government non-financial asset formation was recorded in the area of transport and communications the share of which rose by 4½ percentage points to 34½% from 1999 to 2006, in particular owing to higher expenditure (financed in part by tolls) on German motorways (see chart on page 30).¹⁷ The funds were dedicated almost entirely to constructing and maintaining roads, while rail transport is financed by investment grants. Following an increase in investment for general secondary schools, education, science and arts accounted for 19½% of investment in tangible fixed assets (up from 18½%), of which two-thirds was for schools and therefore predominantly attributable to local government, and one-quarter for state government measures for universities. The share of municipal utilities (two-thirds of which for sewage disposal) recorded a clear fall of 2½ percentage points to just under 7½%, mainly owing to outsourcing. The significant decline in the area of administration of 1½ percentage points to 6% reflects not least the end of expenditure associated with the government's move to Berlin.

Non-financial asset formation by government level: particular importance of local government

At an average of approximately €7 billion, non-financial asset formation of central government, which was largely invested in constructing and maintaining motorways and other trunk roads in Germany, remained relatively stable over the course of the last decade. State government capital formation, by contrast, fluctuated from €8 billion in 1998 down to €6½ billion in 2005 and back up to €7½ billion in 2008¹⁸ (see chart on page 31). However, the bulk of government non-financial asset formation is carried

out by municipalities (local government and special-purpose associations), although their share has diminished in recent years.¹⁹ The reunification-related boom was followed by a sharp decline from 1993 which eased with the economic recovery around the turn of the millennium but then worsened again in the period from 2003 to 2005. The recorded volume of non-financial asset formation plummeted from just under €26 billion in 1998 to €19½ billion in 2005; the decrease was particularly pronounced in the case of construction measures and acquisition of real estate. It was not until the economy started to pick up in 2006 that the volume began to rise, reaching just over €21½ billion in 2008.

The decline in non-financial asset formation of local government varied greatly from region to region. Whereas in western Germany the contraction averaged ½% per year, investment by eastern German local governments fell almost continuously by an annual average of just over 5%. However, it should be remembered that this started from a comparatively high level. The expenditure lead of east German municipalities in terms of *per capita* non-financial asset formation amounted to two-thirds in 1998 and, despite the

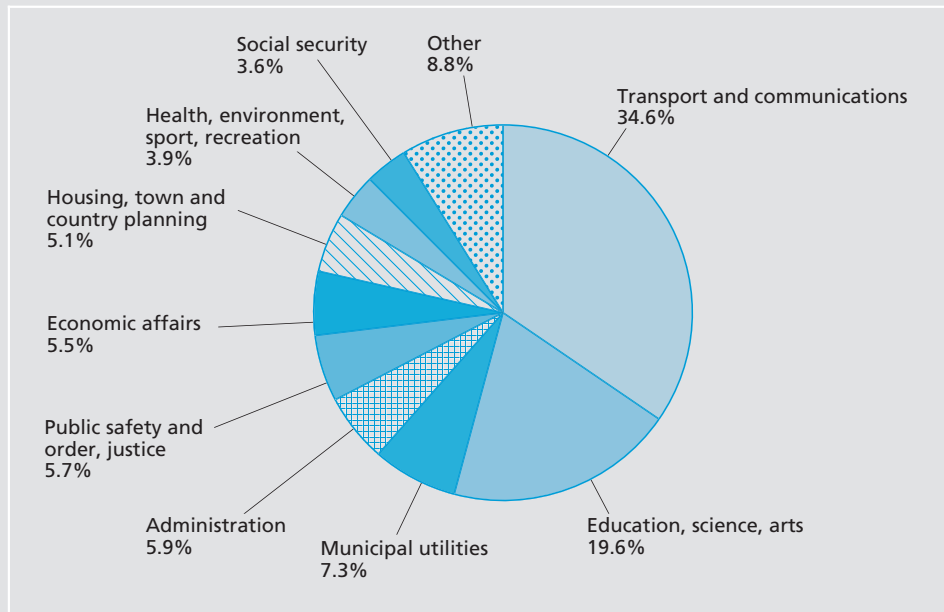
East German municipalities showing sharper fall but higher level

¹⁷ These are the most recent data based on accounting figures available at this time.

¹⁸ This rise is partly attributable to the fact that universities and road construction enterprises, which were increasingly outsourced from the core budgets from 2000, were included in the reporting group for the government's financial statistics from 2007.

¹⁹ However, it should be noted that, according to the cash statistics, a large part of local government investment (almost two-fifths in 2008) is financed by investment grants from state and central government.

Non-financial asset formation in 2006 broken down by purpose *



Source: Federal Statistical Office and Bundesbank calculations. — * As defined in the government's financial statistics; central, state and local government and social security funds.

Deutsche Bundesbank

subsequent substantial fall in investment, still amounted to just under one-tenth in 2008.²⁰

Explanatory factors for the decline in non-financial asset formation

Besides a gradually diminishing catch-up requirement in eastern Germany, the continued tense budgetary situation faced by many local governments is likely to be another key reason behind the trend decline in government non-financial asset formation. The budgetary rules for local government, which are more restrictive than the corresponding provisions applicable hitherto to central and state government, rightly allow debt-financing of investment only if this does not impair the local government's financial capacity. Not least given the overall high level of

and further rise in cash advances, it must have been virtually impossible for many local governments to demonstrate such non-impairment, notwithstanding the high overall fiscal surpluses recorded recently. Consequently, the municipalities limited investment loans to areas where refinancing is assured through fees.²¹ It was clearly easier to put investment projects on hold than to raise taxes or cut current expenditure. As a result, the weight of local government spending grad-

²⁰ According to reports on the use of special supplementary Federal grants, which also include state government, east German government entities have still been able to make a considerable contribution to closing the infrastructure gap estimated vis-à-vis a selected group of west Germany reference states around the turn of the millennium. Comparing the respective public capital stocks, the catch-up requirement was estimated at just over €80 billion for 2005 (see D Vesper (2001), op cit).

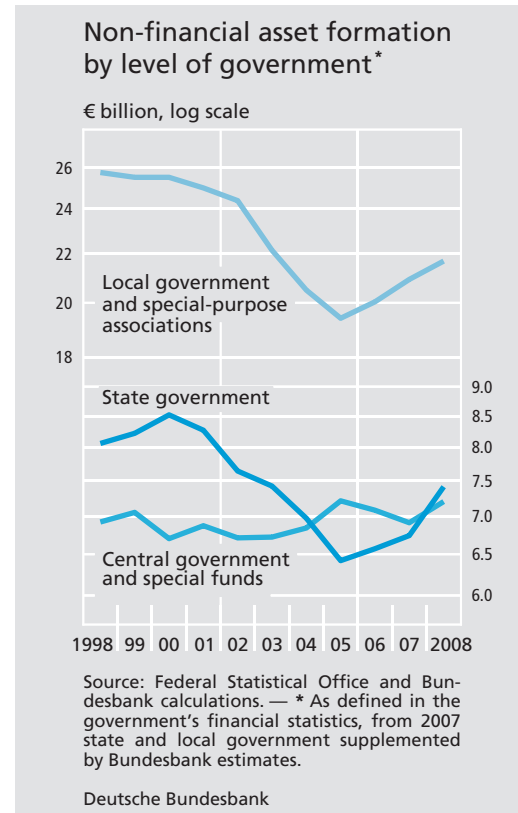
²¹ See Deutsche Bundesbank, Trends in local government finances since 2000, Monthly Report, July 2007, pp 25-44.

Tense budgetary situation for local government accompanied by investment curbs

ually shifted from investment to social expenditure.²² Thus while social benefits comprised only 8% of total local government expenditure in 1970, this increased to just under 18½% in 1998 and 23% ten years later. During the same period, the non-financial asset formation ratio dropped from over 35% in 1970 to barely 17½% in 1998 and down to 12½% in 2008, this also coinciding with a considerable trend decline in the ratio of local government expenditure to GDP since the 1990s. In addition, investment grants from state and central government, in particular to local government in eastern Germany, decreased by one-tenth (€1 billion) over the past decade.

Outsourcing and reclassifications: purely statistical fall in investment, ...

Moreover (statistical) shifts also contributed to the declining trend in the recorded level of government non-financial asset formation without this having a direct impact on the actual level of provision of infrastructure. On the one hand, facilities were outsourced as separate operations, especially from local government core budgets, and thus removed from the reporting group for the government's financial statistics. It often appeared advantageous to outsource entities, in particular, prior to the changeover to commercial double-entry bookkeeping, which local governments have made and some state governments are now also making.²³ As well as the hope that operations could be managed more efficiently, this decision is also likely to have been motivated by the tight budgetary rules for local government mentioned above. The outsourcing of tangible fixed assets and of upcoming debt due to be repaid helped to create temporary budgetary scope. On the



other hand, it appears that, following the changeover of accounting system, some expenditure previously declared as investment spending, for instance on maintaining buildings, was reclassified and is now reported as other operating expenditure. This may have contributed to reporting subdued growth in investment in spite of the recent more favourable financial situation overall.

²² See, for example, H Seitz and C Kurz (1999), *Arbeitslosigkeit, Zuwanderungen und Sozialhilfe: Eine Analyse der Determinanten und der Finanzierung der Sozialhilfeausgaben*, Finanzarchiv 56 (3/4), pp 518-555 (available in German only). For 1975 to 1993, the authors show that rising expenditure on social assistance at local government level crowded out investment in virtually the same amount. A negative correlation also seems to exist in the years thereafter.

²³ See Deutsche Bundesbank, *Changeover to double-entry bookkeeping*, Monthly Report, July 2007, pp 42-43.

... but extent is hard to gauge

However, it is difficult to quantify the significance of these effects. Various studies have shown that the volume of non-financial asset formation of outsourced entities majority-owned by local government might have recently exceeded the volume remaining in local government's core budgets.²⁴ However, to date no time series exist that show outsourced non-financial asset formation, meaning that the contribution of outsourcing to the decrease in investment cannot be precisely measured. Developments have been better documented at state government level, where not least numerous construction and real estate enterprises as well as universities have been outsourced in recent years. For example, between 1999 and 2006 outsourcing apparently contributed two-fifths to the decline in non-financial asset formation reported for this level of government.²⁵

PPP also increasingly important ...

In addition to the outsourcing of entire entities, public-private partnerships (PPP) are an increasingly important factor underlying the understated reporting of actual government non-financial asset formation in the government's financial statistics. Although the financing of infrastructure projects, too, is entrusted to the contractual partners in PPP schemes, major risks typically remain with the commissioning government entity. In such cases, it would be appropriate to allocate the asset acquisition to the government sector in the government's financial statistics, as is the case in the national accounts. According to a summary report by the Federal Ministry of Transport, Building and Urban Development, the investment volume of PPP contracts al-

ready amounted to 4½% of government non-financial asset formation in 2007.²⁶

PPP agreements are normally expected to generate substantial cost advantages,²⁷ especially as the private partner is typically responsible for not only setting up the facilities but also for their long-term operation and thus has a strong incentive to find sustainable economic solutions. However, countervailing effects also ensue, not least from transferring major sub-risks of a project to a private partner, from the associated cost disadvantages of financing and from the need for complex

... but here, too, possible benefits should be examined carefully in each case

²⁴ See, for example, M Junkernheinrich and G Micosatt (2008), *Kommunaler Finanz- und Schuldenreport Deutschland 2008 – Ein Ländervergleich*, p 94 and M Reidenbach et al (2008), *op cit* (available in German only). However, a large part of the figures stated in the studies are probably not attributable to the government sector (see footnote 2) and thus overstate at least the extent of the outsourcing discussed in this article.

²⁵ See also Deutsche Bundesbank, *Outsourcing of service entities from the core budgets*, Monthly Report, July 2006, p 33. Examples of larger outsourcing measures at state government level are construction, real estate and road construction enterprises in North Rhine-Westphalia and Rhineland-Palatinate and the special funds for harbour construction in Bremen and Hamburg. For information about the investment volume concerned, see the Federal Ministry of Finance's reports on the development of state government finances (various volumes), final figures.

²⁶ See J Christen (2008), *Überblick zum Stand der PPP-Initiative in Deutschland*, April 2008, p 10 (<http://www.ppp-verein.de/vortraege> – available in German only). However, whether measured by construction progress (relevant for the national accounts) or by payments (relevant for the government's financial statistics), the ratio is likely to have been much lower recently. Moreover, this is also likely to include PPP projects undertaken by public enterprises that do not belong to the government sector.

²⁷ A breakdown by a working group of the Federal Ministry of Transport, Building and Urban Development shows efficiency gains of more than 10% in general, rising in some cases to one-third. See http://www.ppp-verein.de/res/vortraege/Laufende-PPP-Projekte_04-2008.pdf (available in German only).

contractual conditions.²⁸ It is therefore not possible to assume that PPP agreements are always beneficial, instead this has to be proved on a case-by-case basis using reliable benchmark calculations.

Conclusion

Decline in government capital stock

For a number of years now government non-financial asset formation in Germany has been characterised by a downward trend. The government capital stock has likewise declined perceptibly in relation to GDP and, accompanied by a concurrent sharp rise in the debt level, the overall government asset position has deteriorated considerably. This trend is currently continuing. Looking further ahead, however, the reform of the debt rules should put an end to this problematic development.

But investment fall is relative and not problematic per se

The decline in investment should be seen not least against the backdrop of the diminishing catch-up requirement in eastern Germany, increasing outsourcing from government core budgets and the growing popularity of public-private partnerships. Even negative net government capital formation is not problematic *per se*. The key yardstick is whether the population and the economy are being supplied with services efficiently and adequately. If necessary, this can also be achieved using private investors as long as the latter are bound by clearly stipulated contractual conditions.

The most recent surveys on the level of provision of infrastructure in Germany continue to

show a favourable picture by international standards on the whole. However, surveys or indicators based on simplified supply measures often allow only limited conclusions to be drawn as to necessary adjustments for non-financial asset formation. Other studies, in particular those that focus on local government, indicate that a need for improvement has arisen in some areas. However, it is necessary to assess each possible government investment on its merits, taking into account not only the potential growth effects but also the costs and comparing these with private investments. It may also be worth considering refinancing investments by levying use-related fees or charges rather than taxes. Ultimately, the precise size of the government capital stock reflects political priorities.

With regard to concrete investments, transparent and goal-oriented decision-making processes are essential. The changeover to product-related budgets with commercial double-entry bookkeeping, which is well under way at the local government level and is now being taken on board by some state governments, can help support efficient budgetary planning and implementation. Resources can be used more efficiently as performance can be measured by comparing results with the targets and using local scope for discretion to save costs. Although the cost-efficiency of projects and their implementation already has to be demonstrated

Overall, studies show a good supply level with certain room for improvement

Cost-effectiveness needs to be effectively enshrined

²⁸ See Federal Court of Auditors (2009), Gutachten zu ÖPP im Bundesfernstrassenbau as well as State Court of Auditors of Baden-Württemberg (2009), Wirtschaftlichkeitsanalyse von ÖPP-Projekten der ersten und zweiten Generation bei Hochbaumassnahmen des Landes (available in German only).

today, the present provisions appear insufficiently stringent, so that the calculations are only of limited relevance. Outsourcing and public-private partnerships sometimes give the impression that the main motivation behind them is not so much economic considerations as the greater scope they provide to circumvent budgetary rules. Transparent disclosure of the factors underlying investment decisions and the monitoring of performance are crucial in the context of public accountability.

Need to steady investment

Given the exceptionally sharp recession and the severe downside risks, the recently adopted fiscal stimulus programmes involving a

short-term expansion of government investment were warranted. Nevertheless, fiscal fine-tuning measures with a strong investment component are generally a poor method of stimulating economic activity given the attendant problems. However, consideration could be given to steadying government non-financial asset formation, which has largely taken place at local government level and has tended to be procyclical. This could be supported by reducing the cyclical sensitivity of local government budgets which results especially from local business tax and state government transfers. Sharp cyclical swings in revenue could be better cushioned at the central and state government level.